Prevalence, phenomenology and characteristics of sensory experiences of a deceased spouse: A survey of bereaved older adults

Abstract

Sensory and quasi-sensory experiences of the deceased (SED), also called bereavement hallucinations, are common in bereavement, but research detailing these experiences is limited. **Methods:** An in-depth survey of SED was developed based on existing research, and 310 older adults from the general Danish population participated in the study 6-10 months after their spouse died. **Results:** SED were reported by 42% of the participants with wide-ranging phenomenological features across sensory-modalities. In particular, seeing and hearing the deceased spouse was experienced as very similar to the couple's everyday contacts before death. SED were endorsed as positive by a majority of experiencers, and the experiences were often shared with family and friends. **Discussion:** SED are conceptualized as social and relational phenomena, which may comfort the surviving spouse in late-life bereavement, but also provide tangible help to some experiencers. In clinical practice, SED may be considered a potential resource for the therapeutic grief process.

Keywords: Auditory-verbal hallucination, Sense of presence, Survey, Post-bereavement hallucinatory experiences, Continuing bonds.

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Bereavement is a natural but often highly stressful experience, to which the majority of people are able to adjust after a period of acute grief (Bonanno & Malgaroli, 2019). Reports of sensory experiences of the deceased, as well as more general quasi-sensory experiences, are common following bereavement (Castelnovo et al., 2015; Kamp et al., 2020). The experiences may entail any of the five senses, as illustrated by this example of a tactile experience: 'When I sat alone at the dining table, I felt how she put her arm round my shoulders as she used to do when she served me food' (Grimby, 1998 p.70).

These experiences are complex and wide-ranging phenomena, which have been conceptualized in varying ways in the literature, often reflecting different theoretical perspectives (Kamp et al., 2020), with one of the most dominant conceptualizations being hallucinations and illusions (Castelnovo et al., 2015; Kamp et al., 2019; Rees, 1971). In contrast, another central part of the literature avoids using the term 'hallucination' because of the strong historical association with psychopathology (although contemporary research supports that hallucinations are common in non-clinical populations; e.g. Maijer et al., 2018). This research uses terms such as 'sense of presence' (Steffen & Coyle, 2011), 'continued presence' (Hayes & Leudar, 2016) and 'post death contact' (Klugman, 2006) and often extends the target phenomena to include a wider range of experiences such as vivid dreams and signs or synchronicities. In the present paper, we use the term 'sensory or quasi-sensory experiences of the deceased' (SED) put forth by an interdisciplinary working group (Kamp et al., 2020). This term may bridge the different approaches to SED, as it does not have an implied ontological stance or theoretical framework; at the same time, it may be considered a precise and comprehensive description of the phenomenon.

The current knowledge of phenomenological features of SED primarily stems from qualitative research providing insight into subjective interpretations as well as the psychological, practical and social consequences of having SED (e.g. Austad, 2015; Conant, 1996; Hayes & Leudar, 2016; Keen et al., 2013; Parker, 2005; Steffen & Coyle, 2011). For instance, Hayes and Leudar (2016) drew attention to the helpfulness of many SED in the everyday lives of experiencers, although there were also reports of some more distressing experiences. In addition, experiencers have been observed to draw on a wide range of interpretative resources to make sense of SED, such as viewing them as a spiritual experience and fitting them into religious or afterlife beliefs (Keen et al., 2013; Steffen & Coyle, 2011). However, so far these results are generally based on small self-selected samples. The presence of SED has been reported in a number of studies using larger samples (e.g. Kamp et al., 2019; Klugman, 2006; Rees, 1971; Simon et al., 2011; Zisook & Shuchter, 1985), but the detailed phenomenology and perceptual qualities of SED, as well as how the experiencer made sense of their experiences, were not explored in these studies. Consequently, there is a clear need for larger studies exploring a broad range of characteristics of SED, including phenomenology, perceptual qualities, and personal sense-making of SED, similar to studies conducted in the related field of auditory-verbal hallucinations (AVH; Daalman, Boks, et al., 2011; Kråkvik et al., 2015; McCarthy-Jones et al., 2014).

Research on characteristics of SED is also needed to inform the developing theories of how to make sense of SED (see Kamp et al., 2020 for a recent overview). Several studies draw on Continuing Bonds Theory (Klass et al., 1996), suggesting SED to be one of several ways for the bereaved to continue having a connection to the deceased (Chan et al., 2005; Conant, 1996; Field & Filanosky, 2010). A continuing bond with the deceased is considered normal, and expected to change over time, rather than remaining a static reflection of the relationship at the time of death (Klass et al., 1996; Klass & Steffen, 2018). SED have also

been conceptualized within another prominent grief theory, namely the Dual Process Model of Coping with Bereavement, in which the bereaved person is considered to oscillate between two coping processes, in each dealing with different types of stressors grouped under being loss-oriented and restoration-oriented (Stroebe & Schut, 1999, 2010). The presence of SED has been suggested to be of particular relevance to loss-oriented coping (Kamp et al., 2019; Kersting, 2004), in which the bereaved person deals with stressors related to the loss, such as remembrance, yearning and intrusion of the loss (Stroebe & Schut, 2010). SED may be viewed as a way of coping with the loss by offering confrontation with the relationship to the deceased, and consequently the prevalence is thought to decrease, as the balance shifts from loss-oriented coping being most prominent at first to restorations-oriented coping increasing as time passes (Kersting, 2004; Stroebe & Schut, 2010). Restoration-oriented coping entails attention to secondary stressors, such as learning new skills and roles, and may include distracting oneself from the grief (Stroebe & Schut, 2010). SED, when encouraging the bereft to move forward with their life could potentially also be considered as facilitating restorations-oriendted processes through the continuing bond with the deceased. However, we need more knowledge of SED as phenomena to inform our theoretical understanding of SED and their potential functions in grief.

Despite SED often being a welcome experience, research has indicated that associated stigma (often connected with a perceived link between hallucinations and mental health issues in the general population) may cause distress to the individual, and result in a reluctance to disclose SED (Grimby, 1998; Kamp et al., 2020; Sabucedo, Evans, Gaitanidis, et al., 2020). Therefore, increased understanding and normalization of SED is important to avoid detrimental effects of such concerns. This is also relevant in the current context of the worldwide Covid-19 pandemic where the conditions of grieving often have become more

restricted, potentially resulting in increased feelings of isolation and loneliness (Wallace et al., 2020) – feelings associated with SED (Grimby, 1993; Kamp et al., 2019).

To enhance our understanding of SED we developed an extended survey on SED based on a broad segment of the available research on SED and hallucinations guided by the following questions:

1) What are the phenomenological characteristics and prevalences of different forms of SED?
2) What perceptual features and qualities characterize SED?
3) What are the interpretations of and emotional responses to SED?
4) To what extent are SED disclosed and to whom?

Method

Design and procedure

The present study reports on T1 data from a larger longitudinal study on SED with time points at 6-10 months (T1) and 18-20 months (T2) post loss. Invitations to participate in the survey were sent to 1200 widowed people aged 50-85 years, randomly sampled from the general Danish population. A questionnaire package was distributed to study participants returning a consent form using a pre-paid envelope. Data collection started on October 15, 2016 and continued consecutively until December 31, 2016. The survey data was complemented with socio-demographic information from Danish national registers (see Blinded for Review#1 for details on design, procedure and non-responder analysis).

Measures

To our knowledge, there does not exist a validated measure of SED; instead previous research has generally relied on various self-report single items or semi-structured interviews to assess SED (see Kamp et al., 2020 for a recent overview of different approaches used to

assess SED). Therefore, a self-report survey was developed by the first author to measure a wide-ranging set of characteristics of SED in a larger sample. This was based on a review of previous survey items, qualitative research and phenomenological descriptions of SED (e.g. Conant, 1996; Datson & Marwit, 1997; Guggenheim & Guggenheim, 1995; Steffen & Coyle, 2011), as well as research on hallucinations in clinical and non-clinical populations (e.g. Chadwick et al., 2000; Papapetropoulos et al., 2008). Initially, the survey was reviewed within the research group[1], and then content validated by two groups of independent experts on SED, i.e. eight priests from the Church of Denmark leading bereavement support groups and two qualitative researchers of SED[2]. Subsequently, the survey was piloted in two independent rounds (1: N=14, 2: N=8) among 22 SED experiencers, recruited through bereavement support groups run by the Church of Denmark and social cafés for older adults organized through DaneAge Association (a Danish organization which advocates for the interests of senior citizens). The written response was followed up with a structured telephone interview regarding the content and their comprehension of the questions among 81.8% (N=18) of the pilot participants. A detailed description of this process is available at Open Science Framework (OSF; DOI Blinded for Review), along with the complete surveys of SED distributed at each time point in Danish and translated into English.

In accordance with recommendations for the assessment of altered states of consciousness and anomalous experiences (Moreira-Almeida & Lotufo-Neto, 2017), the survey was preceded by a statement normalizing SED and emphasizing the sensory qualities of the experiences. This was done to ensure participants could identify with the experiences independent of how they made sense of their experiences (e.g. hallucinations, post-death contact). All participants were asked, “Have you experienced seeing, hearing, feeling,

[1] By the third and fourth author
[2] Anne Austad, PhD and the second author

smelling, having a taste experience or having sensed the presence of your deceased spouse, while awake" with response-options of "yes", "unsure" and "no". The full SED survey was prompted by responses of "yes" or "unsure". To increase the validity of the responses, the first author reviewed the questionnaires, contacted participants returning the questionnaire with seeming inconsistencies or missing responses by phone, inviting them to clarify and/or fill in the responses. Of the 325 returning a questionnaire at T1, 8.6% (N=28) were contacted, of whom 96.4% (N=27) were reached and who consequently responded.

Phenomenology

Presence of eight types of SED was addressed with a separate question (e.g. "Have you seen your deceased spouse?"), and participants endorsing sensing of presence, visual or auditory-verbal SED were presented with additional items detailing phenomenological characteristics (e.g. "My spouse moved when I saw him/her"). Furthermore, a number of open-ended questions were asked, (e.g. "Please describe what you heard your spouse say as accurately as possible").

Features, perceptual quality and situational factors of SED

Single-item questions were used to measure frequency and quantity of SED, timing of first occurrence, duration of the experiences, and the extent of how gradual or abrupt the onset and ending of the experiences were, as well as perceptual qualities such as life-likeness of visual SED, perceived veridicality, clarity of the most distinct experience, perceived control, and the level of certainty of it being the deceased that was experienced. Lastly, situational factors associated with SED (e.g. "I sensed my spouse during the day") were measured.

Emotional responses to SED and perceived intentions of the deceased

The overall valence of the experience was measured, as well as the participants' feelings during their SED (e.g. "Loved") and the perceived intention of the deceased (e.g. "Helped me").

Making sense and disclosure of SED

Individual items were used to assess how difficult it was for experiencers to make sense of the experience, along with the extent to which the individual perceived their SED to be in correspondence with their personal worldviews. In addition, participants were presented with different ways of making sense of their experience (e.g. "My sensory experience(s) are a kind of spiritual experience"). The extent of disclosure and perceived reactions from others were measured across six social groups.

Data analysis

A conservative stance was taken by only including participants who confirmed to have had at least one of the eight types of SED in the analyses (i.e., excluding participants who were 'unsure' as to the nature of their experiences).

Recoding was done on three categories of Likert-scale questions, namely those detailing the phenomenology of sense of presence, visual and auditory-verbal experiences, situational factors of SED, and how SED were made sense of. All of these were recoded into 0=not present and 1-4=present, as the variables were used to identify the overall prevalence of descriptive and qualitative characteristics when SED were present.

Descriptive statistics conducted with STATA 15 (StataCorp, 2017) were used for sample characteristics. Descriptive statistics and χ^2-tests conducted with IBM SPSS Statistics (Version 26) were used to explore the characteristics of SED.

Open-ended statements were categorized in terms of characteristics of the experience (e.g. types of communication in auditory-verbal SED), and examples referring to different kinds of experiences are presented below for illustrative purposes.

Results

The survey was completed by 325 participants, of which 14 (4.3%) were excluded because they were unsure of having had SED, and one did not respond to the survey, resulting in a sample of 310 widowed participants with a mean age of 70.2 years (SD=8.28), who had, on average, been married 40.74 years (SD=14.64). About a third of the participants were men (34.8%, N=180) and the most common cause of death was illness (94.5%, N=293). See Table 1 for more details on sample characteristics.

Table 1

Sample characteristics

Variables		**Full sample N=310**	**Non-experiencers N=180**	**Experiencers N=130**
Men		34.8% (108)	41.1% (74)	26.2% (34)
Age		70.2 (8.28)	70.25 (8.19)	70.13 (8.44)
Length of marriage		40.74 (14.64)	41.30 (14.03)	39.95 (15.47)
Education	≤2 years	60% (186)	60% (108)	60.0% (78)
	2-4 years	27.4% (85)	24.4% (44)	31.5% (41)
	≥5 years	10.6% (33)	13.3% (24)	6.9% (9)
Employment	Employed	22.6%(70)	25.1% (45)	19.2% (25)
	Not employed (e.g. retired)	77.1% (239)	74.9% (134)	80.8% (105)
Cause of death	Long-term illness (i.e. months/years)	69.0% (212)	69.4% (125)	66.9% (87)
	Short-term illness (i.e. weeks)	11.9% (37)	10.6% (19)	13.8% (18)
	Sudden illness (e.g. heart attack)	13.2% (44)	13.9% (25)	14.6% (19)

Other (e.g. substance misuse, accident, suicide	1.0% (10)	3.3% (6)	3.1% (4)

Note: Results are reported as Mean (SD) and % (N). The numbers may not add up to 100% due to missing data. SED=Sensory and quasi-sensory experiences of the deceased.

Prevalence and phenomenology of SED

Of the 130 participants reporting SED (41.9% of the overall sample of 310), 60.8% (N=79) endorsed having had experiences in more than one type of sensory modality (not necessarily at the same time), including the quasi-sensory sense the presence of the deceased. See table 2 for an overview of the prevalences of the different forms of SED.

Table 2

Prevalences of different types of sensory and quasi-sensory experiences of the deceased (SED)

Type of SED	**N**	**% of experiencers N=130**	**% of full sample N=310**
Sense of presence	89	68.5%	28.7%
Auditory SED	79	60.8%	25.5%
Auditory-verbal SED	44	33.9%	14.2%
Familiar sounds	58	44.6%	18.7%
Non-familiar sounds	14	10.8%	4.5%
Visual SED	29	22.3%	9.4%
Tactile SED	38	29.2%	12.3%
Olfactory SED	31	23.8%	10.0%

The most common type of SED was the quasi-sensory sense of presence of the deceased spouse, reported by 89 participants (68.5%), most of which at least once experienced their deceased spouse as seeming to have a physical presence similar to when they were alive

(75.3%, N=67). A majority of the sense of presence experiencers endorsed at least once having experienced a spatial location of the deceased (66.3%, N=59) and a more non-specific sense of presence (75.3%, N=67). Furthermore, 65.2% (N=58) reported having at least once sensed the presence of their spouse without any other sensory experience, but only 12.3% (N=16) reported sense of presence as the only type of SED.

At least one type of auditory SED was reported by 79 participants (60.8%). The most prevalent type of auditory SED was hearing familiar sounds of the deceased, such as footsteps (44.6%, N=58). Hearing less specific sounds, such as a loud noises, which were associated to the deceased, but not considered a unique or familiar sound, was the least reported (10.8%, N=14). Of the 44 (33.9%) participants reporting auditory-verbal SED, the experienced location of the voice was reported as occurring inside (56.8%, N=25) and by others or at other times as outside (50.0%, N=22) of the experiencer's head. In addition, a majority found the voice sounded as it used to sound when the spouse was alive (93.2%, N=41; see table 3 for more details on auditory-verbal experiences). A conversation with the deceased was reported by 38.6% (N=17) of the voice hearers. Several voice hearers reported hearing the deceased calling out the name or pet name of the bereaved or encouraging the bereaved to continue with life (e.g. *"It will be okay"*, *"'Now you must continue your life' on Halloween, while he put his hand on my shoulder"*). Descriptions of the deceased taking part in everyday life were also given (e.g. *"If I am standing there, a bit in doubt if I should buy a particular thing, such as a purse, a perfume, I hear 'Just buy it, Molly'"*, *"Drive safely"*, *"He has explained gardening – what to do and then it sorted itself out"*) or report having daily conversations *"as if it was on the phone"*, as well as more thought-like communication: *"It was a sense of consent and approval of the things I have done in connection with the funeral, selling the house, putting our house in order etc."*

Table 3

Characteristics of auditory-verbal sensory experiences (N=44)

Voice location outside of head	50.0% (22)	Voice was distorted	9.1% (4)
Voice location inside of head	56.8% (25)	Voice was distant/low	22.7% (10)
Familiar voice	93.2% (41)	Voice was clear	88.6% (39)

Note: Results are reported as % (N). Missing values were treated as not-present.

Visual SED were reported by 29 participants (22.3%), who on average considered their experience to be very lifelike (M=3.07±1.39; range 0-4), reflected in characteristics such as the deceased being experienced as solid (75.9%, N=22) and in color (62.1%, N=18). Less tangible experiences, such as seeing a shadow/silhouette (58.6%, N=17) or a clear light (31.0%, N=9), were also reported. See Table 4 for more details on reported phenomenology of visual experiences. According to the descriptions supplied by the participants, it was common to see the deceased *"looking like he used to"*, wearing some of the same clothes as when he/she died, and including characteristics, such as smiling and looking comforting (e.g. *"Yes, he was happy and showed me how he could use his arms and legs again. Sometimes he appears as younger and sometimes at the age that I knew him"*), and one described the deceased looking ill.

Table 4

Characteristics of visual sensory experiences of the deceased (N=29)

Shadow/silhouette	58.6% (17)	Shimmered/special glow	24.1% (7)
Full figure person	75.9% (22)	As clear light	31.0% (9)
Partial figure (e.g. hand)	44.8% (13)	Seemed transparent	10.3% (3)
Movement	62.1% (18)	Seemed solid	75.9% (22)
Vision in color	62.1% (18)	Brief vision out corner of eye	51.7% (15)

Vision in black and white	34.5% (10)	Realized later it was something else (e.g., another person, a curtain)	13.8% (4)

Note: Results are reported as % (N). Missing values were treated as not-present.

Tactile SED were reported by 38 participants (29.2%), with the most common experience being touched on a specific area (e.g. being kissed, stroked; 81.6%, N= 31). Other experiences included being held (55.3%, N=21), feeling the weight of the deceased beside oneself (in bed or on a couch; 55.3%, N=21) and a sensation of temperature change (50.0%, N=19).

Olfactory SED were reported by 31 participants (23.8%) such as the smell of perfume, cigarettes/pipe/cigar, personal scent or smells related to illness (e.g. medicine or bodily fluids). Five participants described their experiences as coming from a specified source (e.g. the deceased clothes), and these reports were not included in the present prevalence.

None of the participants were considered to report gustatory SED, as those seemingly reporting such experiences were referring to memories of the deceased rather than actual SED, while awake (e.g. *"when I think about my husband at mealtimes"*).

Features and perceptual quality of SED

A majority of experiencers had their first occurrence of SED within the first month of bereavement (68.5%, N=89), but some reported a first occurrence at 6-7 months post loss (10.8%, N=14). The reported number of SED since the loss varied, with 2-10 SED (45.4%, N=59) being the most common, and only 6.2% (N=11) reporting only one experience of SED. About half (52.3%, N=68) of the experiencers expected to have more SED in the future. Most of the experiencers reported that their typical experience of SED lasted less than five minutes (84.6%, N=110), and generally started abruptly (66.2%, N=86). About the same

proportion of the participants reported an abrupt and a gradual ending of the experience (39.2%, N=51 and 28.5%, N=37, respectively). See Table 5 for details.

Table 5

Features and frequency of sensory and quasi-sensory experiences of the deceased (SED)

Number of SED reported[a]		**Frequency at T1[b]**		**Start and ending of SED**	
1 time	6.2% (11)	Daily	20.0% (26)	Abrupt start	66.2% (86)
2-10 times	45.4% (59)	Weekly	23.1% (30)	Gradual start	20.8% (27)
11-30 times	21.5% (28)	Monthly	27.7% (36)	Abrupt start	39.2% (51)
>30 times	23.9% (31)	<Monthly	23.8% (31)	Gradual ending	28.5% (37)
Length of typical SED[a]		**First occurrence of SED[a]**		**Number of modalities[ac]**	
>5 minutes	84.6% (110)	First day	26.9% (35)	1 modality	39.2% (51)
> 1 hour	5.4% (7)	First week	23.8% (31)	2 modalities	35.4% (46)
Up to days	2.31% (3)	First month	17.7% (23)	3 modalities	12.3% (16)
Constant experience	2.3% (3)	2-3 months	12.3% (16)	4 modalities	9.2% (12)
Lost sense of time	4.6% (6)	4-5 months	8.5% (11)	5 modalities	3.8% (5)
		6-7 months	10.8% (14)		

Note: Results are reported as % (N). Total N=130. [a] The numbers may not add up to 100% due to missing data. [b] At 6-10 months post loss, 5.4% (N=7) of the experiencers reported that their SED had stopped. [c] Modalities included visual, auditory, tactile, olfactory and sense of presence

On average, the experiencers were rather certain of the SED being of their deceased spouse (M=4.22±1.00; range 1-5). In addition, they reported the experience to be rather clear (M=6.83±2.94; range 0-10) and fairly true or real (M=3.23±1.47; range 0-4). Lastly, the average level of perceived control over the experience was low (M=2.45±1.58, range 0-4).

Situational factors associated with SED

It was common to experience at least one SED both at daytime (84.6%, N=110), at night while awake (58.5%, N=76) and in the transition between sleep and wakefulness (70.0%,

N=91). A small minority (5.4%, N=7) reported SED as only occurring in the transition between sleeping and being awake, and none reported SED only at night.

The reported circumstances which preceded SED were diverse, including thinking of the deceased (70.0%, N=91), doing unrelated activities (e.g. watching TV; 60.0%, N=78), and having intense emotions (56.9%, N=74). Little more than half of the experiencers reported always being alone when experiencing SED (54,6%, N=71), and it was uncommon to have consumed any kind of intoxicating substance prior to experiencing the SED (e.g. alcohol, 17.7%, N=23; see Table 6 for details).

Table 6

Situational factors of sensory and quasi-sensory experiences of the deceased (SED)

Daytime	84.6% (110)	Consumed intoxications	17.7% (23)
Night (while awake)	58.5% (76)	Thinking of deceased before	70.0% (91)
During sleep-transition	70.0% (91)	Occupied elsewhere (e.g. TV)	60.0% (78)
Alone during SED	54.6% (71)	Strong emotions before	56.9% (74)
Sleep-deprived	43.8% (57)	Happen in certain situations/places	70.8% (92)

Note: Results are reported as % (N). N=130. Missing values were treated as not-present.

Emotional responses to SED and perceived intentions of the deceased

The experiences were generally considered positive (M=4.12±0.86; range 1-5), as only 4.6% (N=6) and 16.2% (N=21) reported the experience as negative and neutral, respectively. The remaining experiencers reported their SED as either positive (38.5%, N=50) or very positive (37.7%, N=49). As illustrated in Table 7, positive feelings, such as joy (46.9%, N=61), feeling comforted (29.2%, N=38) and loved (47.7%, N=62), were common during SED. It was also common to experience more upsetting feelings such as missing the deceased (46.2%, N=60), grief (34.6%, N=45) and loneliness (25.4%, N=25.4). Negative emotions like

anger (2.3%, N=3), fear (4.6%, N=6), and being concerned about one's own mental health (9.2%, N=12) were uncommon.

Table 7

Overview of feelings during sensory and quasi-sensory experiences of the deceased

Joy	46.9% (61)	Emptiness	14.6% (19)
Reunited	10.0% (13)	Anger	2.3% (3)
Comforted	29.2% (38)	Unsafe	3.8% (5)
Sense of connectedness with him/her	48.5% (63)	Fear	4.6% (6)
Loved	47.7% (62)	Fear of going crazy	9.2% (12)
Safety	49.2% (64)	Shock	3.1% (4)
Calm	37.7% (49)	Surprise	12.3% (16)
Grief	34.6% (45)	No emotions	2.3% (3)
Loss/missing him/her	46.2% (60)	Other	2.3% (3)
Loneliness	25.4% (33)		

Note: results are reported as % (N). N=130.

Generally, participants perceived their SED as benign (see Table 8), connected with positive meanings such as the deceased intending to protect (33.8%, N=44), comfort them (34.6%, N=45), or giving the bereaved permission to go on living their lives (40.8%, N=53). None of the participants felt the deceased had ill intentions such as persecuting or punishing them, but exploring the descriptions supplied revealed other types of perceived intentions like the deceased apologizing for having left (died) or for wrongdoings while alive.

Table 8

Overview of the perceived intentions in sensory and quasi-sensory experiences of the deceased

Protected me	33.8% (44)	Gave me permission to continue my life	40.8% (53)

Helped me	33.8% (44)	Accepted my choices/actions	31.5% (41)
Watched over me	23.1% (30)	Pursued/haunted me	0% (0)
Comforted me	34.6% (45)	Punished me	0% (0)
Guided me	26.2% (34)	Watched over me to see if I did something	6.9% (9)
Other	22.3% (29)	he/she would not want me to do	

Note: Results are reported as % (N). N= 130.

How experiencers made sense of SED

For just over half of the participants, it was easy or very easy to make sense of their experiences (30.8%, N= 40 and 20.8%, N=27, respectively), and the experiences were mostly in accordance or very much in accordance with the experiencer's overall view of life and understanding of the world (31.0%, N=45 and 26.2%, N=38, respectively). About a third of the experiencers (36.1%, N=52) found it neither easy nor difficult to make sense of their experience, and 37.2% (N=54) reported that the experience was neither in accordance with nor in opposition to their general worldview.

Participants tended to endorse more than one way of making sense of their SED; for instance, considering SED as an artefact of the mind or the senses was endorsed by 79.5% (N=101) and believing the deceased was attempting to make contact by 76% (N=98). Furthermore, 57.8% (N=74) endorsed spiritual explanation, and 72.1% (N=93) reported not employing a particular way of making sense of their experience.

Disclosure of SED

A majority disclosed their experience to at least one person (85.4%, N=111) and generally felt they were received positively (see Table 9). Close family and friends were the most common social groups to share SED with (75.4% (N=98) and 66.2% (N=86), respectively), and 54% (N=34) of the 63 participants who had been in contact with other grieving people had shared their experience with this group.

Table 9

Disclosure of sensory and quasi-sensory experiences of the deceased and perceived reactions from social network

Relationship categories	Positive	Mixed	Negative	Did not disclose	No contact with this group
Close family (e.g. children, parent or sibling)	70.8% (92)	4.6% (6)	0% (0)	21.5% (28)	2.3% (3)
Friends	53.8% (70)	10.8% (14)	1.5% (2)	29.2% (38)	3.8% (5)
Distant family	33.8% (44)	11.5% (15)	0% (0)	40.8% (53)	11.5% (15)
Acquaintances	36.2% (47)	14.6% (19)	0.8% (1)	38.5% (50)	6.9% (9)
Other bereaved (e.g. grief support group)	21.5% (28)	3.8% (5)	0.8% (1)	22.3% (29)	49.2% (64)
Professionals (e.g. priest, doctor or psychologist)	40.0% (52)	3.8% (5)	0.8% (1)	26.2% (34)	27.7% (36)

Note: Results are reported as % (N). N=130

Discussion

To our knowledge, the present survey is the largest to date to explore a wide range of characteristics of SED among widowed individuals. At 6-10 months post loss, 41.9% of the 310 participants reported at least one SED. This is slightly lower than previous estimates of SED among widowed adults. Interestingly, the present prevalence is closer to the estimates in larger studies (>150) with longer time since loss (c. 50%; Kamp et al., 2019; Rees, 1971) rather than small studies (<50) within the first two months of the loss (Grimby, 1998; Lindstrøm, 1995). This may reflect a decrease in SED prevalence over time (Byrne &

Raphael, 1994; Grimby, 1998), and, perhaps, that some of the one-time experiences in the immediate aftermath are not recollected as time passes.

SED are complex experiences with wide-ranging phenomenology

Descriptions of phenomenological and perceptual features described in qualitative studies of SED (e.g. Conant, 1996; Grimby, 1998; Steffen & Coyle, 2011; Troyer, 2014) are supported by the present results relying on a larger representative sample of widowed adults. For instance, sensing the presence of the deceased has been described as potentially entailing a spatial location of the bereaved, but to others (or at other times) a non-specific general awareness (Longman et al., 1988; Steffen & Coyle, 2011), which are also common features in sense of presence experiences outside of bereavement (James, 1982/1902). Furthermore, experiencers also reported receiving messages from the deceased without any verbal content, as described in previous research (Conant, 1996; Parker, 2005), which may have qualities comparable to non-bereavement communications of a more thought-like nature (Karlsson, 2008; Woods et al., 2015).

A core feature of SED is that the experience is of the deceased loved one (rather than an unknown person, an animal or some other creature), and the present results confirm that the bereaved are generally rather sure of the experience being of the deceased. This corresponds with the reports of the deceased's voice often sounding clear and like the deceased, which also corresponds with perception of voice identity (e.g. family member) known from AVH (Badcock & Chhabra, 2013). Furthermore, a majority of the participants with visual SED endorsed at least once having an experience of a full-figured person, solid and in color (not necessarily at the same time), and visual SED were typically seen as very life-like. Some experiencers also reported SED which go beyond what may be considered recognizable characteristics (e.g. the voice, behavior or appearance of the deceased), such as feeling the deceased's touch as a temperature change, or hearing loud sounds (Conant, 1996;

Kamp & Spindler, 2019; Keen et al., 2013). However, this may be understood in light of an accompanied sense of 'knowing' that this was, indeed, the deceased, as reported by participants in the study by Steffen and Coyle (2011); this may be a key feature in many SED.

The multi-faceted nature of SED is further highlighted by the reported occurrence of experiences in more than one sensory modality or as a sense of presence (not necessarily at the same time), which concurs with previous research on both SED (Grimby, 1998; Olson et al., 1985) and hallucinations (Larøi et al., 2019; Waters & Fernyhough, 2017). As such, SED are found to be complex and multimodal experiences, which vary not only between people, but also potentially within the same individual over time. This concurs with observations in previous research (Hayes & Leudar, 2016), and considerations of whether SED can be considered a unitary phenomenon (Kamp et al., 2020; Ratcliffe, 2017). In addition, the results render support to critique of some of the questions previously used to assess SED (e.g. 'I actually saw the deceased stand before me'; Field & Filanosky, 2010), as such items may only capture a limited subset of the possible experiences (Kamp et al., 2020). This highlight further the need for a validated measure of SED, as its absence compromises between-study comparison and the generalizability of study results, which are two of the major interrelated challenges in the current literature of SED.

SED as a relational and social phenomenon

The emotions reported during SED and the perceived communications from the deceased, such as feeling comforted or guided by the deceased, are in line with observations of the relational meaningfulness of SED (Hayes & Leudar, 2016; Keen et al., 2013; Parker, 2005; Ratcliffe, 2020; Steffen & Coyle, 2011). In addition, this concurs with conceptualizations of hallucinations, particularly AVH, as relational (Alderson-Day & Fernyhough, 2016; Romme et al., 1992). In this way, SED go beyond merely sensory perception, but frequently include a

sense of perceived agency of the deceased, with meaningful intentions, impact, and consequences, in many ways similar to interactions occurring between living people. This also concurs with the Continuing Bonds perspective (Klass et al., 1996), where SED may be viewed as one way of continuing the pre-death relationship, accounting for the many relational consequences of SED (Chan et al., 2005; Kamp et al., 2020; Parker, 2005). The relational quality of SED may be observed in specific types of SED, such as having conversations with the deceased spouse or in tactile experiences, where the bereaved feels acted upon affectionately (e.g. hugged or kissed by the deceased). This may be understood as continuations of the pre-death relationship, supported by SED being in many ways experienced as similar to the everyday contact pre-death, such as the voice being recognizable and the visual experiences being reported as very life-like, as well as previous observations of SED encompassing qualities unique to the deceased (Keen et al., 2013; Steffen & Coyle, 2011). The experience of being connected to the deceased loved one is likely to contribute to the generally positive evaluation observed both in the present and in previous studies (Datson & Marwit, 1997; Grimby, 1998; Kamp et al., 2020). This aligns with research on AVH highlighting the importance of meaning-making for voice-hearing (Davies et al., 1999; Romme et al., 2009), and opens up to the consideration of SED as providing *comforting companionship* in late-life bereavement to most experiencers, similar to earlier observation by Bowlby (1980).

SED as part of both loss- and restoration-oriented processes of coping with bereavement

The present study found no single situational factor to be of greatest importance, such as emotional state, activity, surroundings, or time of day, which corresponds with previous research finding SED to occur in a range of contexts (e.g. watching TV, doing chores, thinking of the deceased; Austad, 2015; Grimby, 1998; Haraldsson, 1988; Rees, 1971). These

results concur with the suggestion that SED may be relevant to the loss-oriented process, as conceptualized within the Dual Process Model (DPM) of coping with grief. The DPM suggests that the bereaved oscillate between a loss orientation and a restoration orientation when adapting to a major loss (Stroebe & Schut, 1999, 2010). For example, remembering the deceased is understood to be part of loss-oriented coping, and SED may act as reminders of the loss in situations the bereaved are not actively dealing with loss, such as when watching TV, in which case they may act as triggers for an oscillation from restoration to loss orientation. In addition, the present study points to SED often being accompanied by feelings of grief and loss, in accordance with previous observations (Carlsson & Nilsson, 2007; Grimby, 1998) providing support for a conceptualization of SED as a part of the loss-oriented process. However, SED are also reported to be of assistance in solving everyday tasks, such as explaining gardening as reported in the present study – or as reported before, fixing a waste disposal (Hayes & Leudar, 2016) or making dinner (Kamp & Spindler, 2019). In particular, SED may enable the bereaved person to tackle tasks previously done by the deceased spouse, such as driving (Steffen & Coyle, 2011), and as such the function of SED may sometimes go beyond the loss-oriented process and even act as facilitating oscillation towards restoration oriented coping, where the bereaved individuals deals with secondary stressor of the loss. In fact, we suggest that SED seem to have the potential of being a tangible help to the bereaved person in moving forward, such as learning new skills or taking on new roles. This, to our knowledge novel proposition of a potentially dual function of SED in the grief process, also highlights the interpersonal quality of SED discussed above, and warrants further study.

Disclosure and making sense of SED

Surprisingly, a majority of experiencers reported having shared their SED (primarily with close family and friends) and generally having felt positively received. Previous research

reported reluctance to disclose SED, partly because of associated stigma (Grimby, 1998; Rees, 1971), but it has also been suggested that experiencers may share SED with family and friends who are expected to be open to such experiences (Devers, 1988). In addition, most experiencers in the present study considered SED to be in accordance with their overall worldview, and considered it easy to make sense of their experience, in contrast to previous research pointing to the difficulty of making sense of SED in Western contexts (Steffen & Coyle, 2010, 2011). However, experiencers endorsed more than one (potentially conflicting) way of making sense of their experience in line with previous reports of experiencers using different discourses (e.g. hallucination and post-death contact), depending on the audience (Bennett & Bennett, 2000). It is also consistent with the argument that experiencers may not need a completely coherent worldview to account for their experiences (Austad, 2015). Several explanations may account for these results, such as a normalization of SED over the years. This may be influenced by portrayals of SED in films and series, such as the American television series The Affair (Reiner, 2017). In addition, Denmark is considered a highly digitalized society even among the elderly (Tassy et al., 2018), so another source of normalization may be the emergence of social media and the greater preparedness to share a whole range of experiences of contact with the deceased openly (Irwin, 2018). Moreover, the openness about SED may also reflect an openness to spirituality and spiritual experiences in the Church of Denmark (Mollerup-Degn et al., 2008), of which a majority of the Danish population, and particularly the older population, are members (76.9% of the general population was members in 2016; Kirkeministeriet, 2019).

Features of SED similar to features of AVH in non-clinical populations

The present results pointed to the presence of both gradual and abrupt beginnings and endings of SED concurring with previous research (Devers, 1988). A majority of the experiencers reported their first SED within the first month of bereavement, and it was also common to

have more than one experience of SED. In fact, 20% reported daily experiences at 6-10 months after the loss, which is comparable to the frequency of voice-hearing in non-clinical populations (daily experiences reported from 6 to 38%; Daalman, van Zandvoort, et al., 2011; Kråkvik et al., 2015). In addition, SED generally lasted less than 5 minutes, which is also similar to the typical duration of AVH in non-clinical populations (Baumeister et al., 2017; Daalman, Boks, et al., 2011). More research is needed to understand the similarities and differences between SED and hallucinations outside of bereavement in both clinical and non-clinical populations, but it seems likely that the different areas may be mutually informative (Kamp et al., 2020).

Notably, 23.8% reported less than monthly experiences, indicating that persisting SED may not always be experienced monthly. However, some studies have used frequency scales with a narrow reference frame, such as within the previous months (e.g. Byrne & Raphael, 1994; Field & Filanosky, 2010), which is common when measuring symptom severity. Our results indicate that such assessment measures may not provide an accurate picture of the occurrence of SED by excluding less frequent SED. In addition, it is questionable whether it makes sense to conceptualize SED within such a framework of higher frequency indicating 'higher severity'.

Limitations

To our knowledge the present study is the largest and most detailed survey of SED, and as such, it is an important contribution to increasing our understanding of SED. However, the results should be considered with a number of limitations in mind. First, even though steps were taken to ensure the quality of the measurement, including expert validation of the survey by both researchers and clinicians, two rounds of pilot-testing amongst bereaved individuals reporting SED with follow-up interviews, and a review of the responses in the present study, the question of validity remains an issue. Secondly, data were collected using

three manners of distribution to enhance participation regardless of disabilities, although mixed distribution may increase the risk of bias (Hoy et al., 2012). However, post-hoc χ^2-test revealed no impact on the main outcome in this study (i.e. SED or not; p=.163). Thirdly, the generalizability of the results beyond Scandinavia might be limited. However, SED are recognized as a cross-cultural phenomenon (Kamp et al., 2020; Sabucedo, Evans, & Hayes, 2020), and the results generally align with results from previous research studies conducted in Europe and USA, pointing to the relevance of the present results in a wider context.

Clinical implication and future directions

SED were found to be common, wide-ranging and mostly positive experiences among older widowed adults, and as such, the study contributes to the literature that considers these experiences as essentially normal. We argue that SED have an intrinsic relational quality, which to some extent may be comparable to experiences outside of bereavement, such as AVH (Alderson-Day & Fernyhough, 2016). As such, the experiences may be a comfort to the bereaved in coming to terms with the loss. This concurs with recent guidelines of approaching disclosures of SED in clinical practice with openness and curiosity (Hayes & Steffen, 2018; Kamp et al., 2020). SED may be a potential resource in working on the relationship to the bereaved, both in terms of dealing with potential unfinished business, and also to confirm a loving connection. In addition, validating that SED are essentially a normal part of bereavement could help reduce any additional stress of worrying about one's mental health caused by stigma associated with SED (Hayes & Steffen, 2018; Kamp et al., 2020).

More research on SED is warranted, which could include a relational or attachment perspective on SED as well as increasing our knowledge about the heterogonous nature of these experiences (Kamp et al., 2020). This study also highlights the importance of continuing to work on valid quantitative measures of SED that may be used in large-scale population-based studies. This could include a focus on the phenomenological diversity of

SED, but also other dimensions, such as the experiencer's relationship to their SED, potentially similar to the measures developed in research on hallucinations (e.g. Chadwick et al., 2000).

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